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AirCell

Before the Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
Amendments of part 5 of the	)	ET Docket 96-256
Commission's Rules to Revise the	)	
Experimental Radio Service Regulations	)	

AirCell Inc. is a Boulder, Colorado based holder of an authorization issued under Part 5 of the Commissions Rules, 47 CFR 5.01 *et seq.* As such, it is qualified to comment on the above identified Notice of Proposed Rule Making.

Wireless Communication Solutions for Aviation™

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AirCell, operating under its experimental authorization, is developing a new generation of wireless communication services for the [1]general aviation market This new generation of wireless communications services will dramatically increase aircraft safety, will provide the quality of service and ease of use the public expects from current and emerging wireless systems, and will be available at costs significantly below that of equipment and services available today for general aviation consumers. Additionally, AirCell expects availability of its service to significantly reduce interference that exists today, caused by illegal use of cellular telephones on board such aircraft.

AirCell was formed in 1991 and has been operating under a variety of authorizations under Part 5 since 1992. AirCell's initial authorizations were granted under the provisions of Special Temporary Authority. This allowed AirCell to perform a number of very different experiments looking at radio propagation, equipment, etc. Following this series of experiments we sought,

[1] General Aviation denotes, in this instance, non-commercial aircraft. AirCell expects the initial market for the service and equipment, with which it is experimenting, to be corporate jet and turboprop aircraft followed somewhat later by piston engine powered aircraft.

and were granted, an experimental (developmental) license in 1994 to investigate system performance characteristics, transfer of calls, access to and from the on-board equipment, etc. In 1996, AirCell applied for market development authority and the FCC issued AirCell, Inc. an experimental (developmental) license to determine whether there was in fact a viable market for its proposed system and services. In November, 1996, AirCell demonstrated its initial prototype system and proposed service, at the National Business AirCraft Association show in Orlando, FL., to sample its intended market and see if business aircraft owners were interested in having such a service. AirCell received more than 1,000 positive responses. AirCell has also received interest from the Federal Aviation Administration because of the potential safety enhancements of our service. President Clinton has vowed "We will use all the tools of modern science to make flying as safe as possible". AirCell is modern science applied to the aviation need. U.S. military agencies have shown interest due to the quality and cost of our proposed service and government agencies supporting the aircraft used to transport senior government personnel are also contemplating use of the AirCell system.

[2]Since November, AirCell has concentrated its efforts on implementation of a network sufficient to attract the participation of the corporate jet fleet. Under the terms of its authorization, AirCell can instrument a number of sites and equip up to 6,000 aircraft, or about 3% of its potential market, to determine whether sufficient interest exists in this niche market and whether this much

[2] Such participation cannot be achieved with only a handful of stations. Corporate jets, today, fly at almost 800 km/h, frequently from coast to coast. With a 300 km diameter circle of coverage at 10 km altitude generated by the ground transmitter, the average time a jet will spend within the coverage circle is less than 20 minutes. No corporate executive will accept 20 minutes or less of communications capability during a 3-5 hour flight from a few isolated locations in the nation and none will endure the aircraft downtime and or invest the $6,000.00, or more, required to install the equipment.

desired and needed service can be provided on a cost effective basis and without harmful interference to existing services in the same bands.

AirCell provides this description of its efforts and its current authorization to make two points:

1. AirCell is a small, highly entrepreneurial company that has developed a technology to satisfy the need for effective, efficient communications for corporate executives when inflight aboard corporate aircraft. Experimental authorizations have permitted it to test its hypotheses in ways that simulation and gaming cannot provide -- the real world. Careful testing and operating in the RF environment is vital to further develop the technology and to demonstrate capability to reuse frequencies and to gain access to the investment capital needed for full implementation.

2. Significant changes in wireless services are seldom instigated by large firms. Indeed, it is the smaller company, with an entrepreneurial, inventive bent that has created most of the revolutionary changes. Witness, as a few examples, the changes in telecommunications caused by Secode's development of trunking technology, which provided the first Improved Mobile Telephone Service, forerunner of Cellular Radio Service; the experimental efforts and challenges to the telephone companies long distance monopoly by Microwave Communications, Inc., now MCI; the development of the first successful air-ground communications services by AirPhone, now GTE AirPhone; and the three Pioneer's preference awards for PCS, two of which were given to startup firms Omnipoint and American Personal Communications.

Unfortunately, highly entrepreneurial small companies, such as ourselves, do not have the financial resources of the telecommunications giants. Indeed,

firms such as ours often find unmet needs the larger firms with their focus on large market segments, have ignored because the forecast revenue stream is too small to be accommodated within their structure. For example, AT&T considered air-ground communications in an early report on FCC Docket 18262 , but apparently never built a system to link into the cellular infrastructure. We don't think smaller firms should be denied business opportunities because AT&T or some other telecommunications giant chose not to build a system such as ours. The limited capital capacity and small cash reserves of most entrepreneurial firms may require they look for a revenue source from their development before it is made fully commercially available. In addition, sale of service on an experimental basis may be an economic necessity to verify markets so as to attract capital for eventual full commercialization of the product or service. Further, if the new service requires rule changes some limited offering of service and equipment to informed consumers can allow revenue generation and continued development during the rule making process.

In general, the rules proposed in the instant proceeding will encourage and promote technical innovation, simplify the application, and grant processes and reduce confusion. We are not troubled, in principle, with the proposal to limit the size and scope of experiments as proposed in Para. 17 of the Notice. Any such limitations, however, should not undermine the technical purpose of the experiment or in the case of a marketing study limit commercial operations in a way that would prevent the licensee from verifying the true nature of the market or demonstrating the viability of the considered business. Limitations on size and scope could be sought by rivals who want to prevent the development of systems and services that would compete with their current businesses. AT&T's focus in its comments in this proceedings, on AirCells experimental authority, points out how the proposed rule might be used by entrenched operators to block potential new competitors.

We suggest that the review process for "market development" grants be clearly defined. Consideration should be given as to whether:

- new technologies are being investigated,
- a significant advance in existing services is being tested with existing technologies,
- significant spectrum efficiencies can be gained by ultimate commercial implementation of the application.

If such advantages can be gained, it is in the public interest to grant such applications, subject to interference and emission constraints. Such action encourages competition and the development of new services outside the Commission's rules structure. Market development grants, in particular, should be for a term of five years, but be non-renewable.

AirCell agrees that the definition of harmful interference in proposed rule Section 5.5 and requirement for cessation of operation upon demonstration of harmful interference in proposed rule Section 5.85(c) should be retained. It is important for "experimenters" to recognize the existing operating services. AirCell asks that the criteria for "harmful interference" be specifically identified as those of the regularly allocated service enumerated in Section 2.106 of the Commission's rules, 47 CFR Section 2.106. Incorporation of this criteria will clarify the requirement for experimental licensees and ease the coordination process with regular licensees and CIB investigators.

Thank you for considering AirCell's comments on this important rule making.

Sincerely,

James E. Stinehelfer
President and COO